

RECEIVED
CENTRAL FAX CENTER
SEP 29 2010

10/584,975

1-13. (CANCELED)

14. (PREVIOUSLY PRESENTED) A method of increasing readiness of a crossover gear shift in an automatic transmission, the method comprising the steps of:

attaining at least one of a snatch operation of the disengaging switching element and an increase of the transmission rotational speed gradient by:

issuing a crossover gear shift switching command to the transmission;

transmitting a set transmission rotational speed and a set motor torque from a transmission controller to a motor controller;

actuating a motor fueling to increase fuel supplied to the engine and to increase motor output torque to the transmission immediately after issuing the crossover gear shift switching command depending upon one of the set transmission rotational speed and the set motor torque; and

adjusting engagement and disengagement of transmission clutches depending on the increase in fuel supplied to the engine or a resultant increase in the motor output torque to the transmission during the gear shift.

15-20. (CANCELED)

21. (PREVIOUSLY PRESENTED) The method according to claim 14, further comprising the step of reducing pressure in the disengaging switching element, during the motor fueling, such that the opening of the disengaging switching element is accelerated.

22. (PREVIOUSLY PRESENTED) The method according to claim 14, further comprising the step of increasing pressure in the engaging switching element during the motor fueling.

23. (CANCELED)

24. (CURRENTLY AMENDED) A method for increasing a spontaneity of an overlapping shifting operation in an automatic transmission, with a command for motor fueling, being given either by a switch command or directly thereafter, at least one of

9/29/10 10:48 AM

- 2 -

10/584,975

a switching element, being disengaged, is forced open and a rotational speed gradient (turbine rotational speed) is increased by the motor fueling, the motor fueling occurring by setting either a rotational speed or a motor torque to be utilized by the automatic transmission, and the command for motor firing fueling being given by a transmission controller, the method comprising the step of: ←

carrying out the motor fueling up to a maximum attainable full-load characteristic curve by setting the rotational speed and the engine torque to be utilized by the automatic transmission as a function of a desired increase in spontaneity; and

monitoring opening of the switching element, which maintains the rotational speed at an old synchronous rotational speed, to prevent undesired transmission of an additional demand for motor fueling to an output, the opening of the switching element taking place up to a defined time after a start of the additional demand for motor fueling and, subsequently, setting a corresponding rotational speed gradient in a direction of a new synchronous rotational speed.

25. (CANCELED)

26. (PREVIOUSLY PRESENTED) The method according to claim 24, further comprising the step of monitoring whether a rotational speed difference with respect to the new synchronous rotational speed reduces constantly and to a certain degree.

27. (PREVIOUSLY PRESENTED) The method according to claim 24, further comprising the step of, after the new synchronizing rotational speed is attained, terminating continuation of the additional motor fueling beyond a certain duration of time if a further shifting operation is not initiated.

28. (PREVIOUSLY PRESENTED) The method according to claim 24, further comprising the step of forming torque signals, for either different parts of the shifting operation or the switching element being disengaged and a switching element being engaged, differently in one of a motor controller or the transmission controller, and

9/29/10 - 10:45 AM

- 3 -

10/584,975

transmitting the formed torque signals to the other of the motor controller or the transmission controller.

29. (CURRENTLY AMENDED) The method according to claim 28, further comprising the step of foregoing additional motor fueling to disengage the switching element during disengaging the switching element by the pressure control of the being ←
disengaged, for controlling the pressure for engagement of the switching element being ←
engaged. ←

30. (CURRENTLY AMENDED) The method according to claim 28, further comprising the step of either transferring additional motor fueling for disengaging the switching element during engaging the switching element by the pressure control of the ←
switching element being engaged or considering the additional motor fueling during ←
engaging the switching element by the pressure control of the switching element for ←
controlling pressure for engaging the switching element being engaged. ←

31. (PREVIOUSLY PRESENTED) The method according to claim 24, further comprising the step of, in addition to the motor fueling, reducing a pressure at the switching element being disengaged in order to accelerate opening of the switching element.

32. (PREVIOUSLY PRESENTED) The method according to claim 24, further comprising the step of, in addition to the motor fueling, increasing a pressure at the switching element being engaged in order to reduce interruption in acceleration at a drive output of the automatic transmission.

33. (PREVIOUSLY PRESENTED) The method according to claim 24, further comprising the step of, in addition to the motor fueling, increasing a pressure at a switching element being engaged.

34. (CURRENTLY AMENDED) A method for increasing a spontaneity of an overlapping shifting operation in an automatic transmission, the method comprising the steps of;

02/29/10 - 12:45 AM

- 4 -

10/584,975

issuing an overlapping switching command to a transmission controller;
transmitting a command from a transmission controller to a motor controller for increasing motor fueling directly after transmission of the overlapping switching command;

setting a transmission rotational speed and a motor output torque as a function of a desired increase in spontaneity; ←

fueling the motor depending on either the set transmission rotational speed or the set motor output torque to be utilized by the automatic transmission; ←

fueling the motor up to a maximum attainable full-load characteristic curve; and

at least one of forcing open a switching element being disengaged and increasing a transmission rotational speed gradient (turbine rotational speed) by the fueling of the motor. ←

35. (NEW) The method according to claim 34, further comprising the step of fueling the motor without altering clutch pressure.

36. (NEW) The method according to claim 34, further comprising the step of increasing the motor fueling depending upon either the set transmission rotational speed or the set motor torque to increase the motor output torque to be utilized by the transmission, and adjusting the disengagement of the switching element depending on either the increase in the motor fueling or a resultant increase in the motor output torque to be utilized by the automatic transmission